IN THE CLAIMS

Following are the claims as currently pending for consideration:

1-15. (Cancelled)

16.   (Previously Presented)   A processor comprising:

a decode unit to decode a plurality of packed data instructions including a packed sum of absolute differences (PSAD) instruction having a first format to identify a first set of packed data, and a packed multiply-add (PMAD) instruction having a second format to identify a second set of packed data, said decode unit to initiate a first set of operations on the first set of packed data responsive to decoding the PSAD instruction and to initiate a second set of operations on the second set of packed data responsive to decoding the PMAD instruction; and

an execution unit to perform a first operation of the first set of operations initiated by the decode unit and to perform a second operation of the second set of operations initiated by the decode unit.

17.   (Previously Presented)   The processor of Claim 16, wherein the decode unit further decodes a plurality of instructions of a PENTIUM microprocessor instruction set.

18.   (Previously Presented)   The processor of Claim 16, wherein the first set of operations comprises:

Application No.: 10/005,728   2   Docket No.: 42390P5943C

a packed subtract and write carry (PSBWC) operation;

a packed absolute value and read carry (PABSRC) operation; and

a packed add horizontal (PADDH) operation.

19.   (Previously Presented)   The processor of Claim 16, wherein performing
the first operation causes the execution unit to:

subtract one of a plurality of elements of a first packed data of the first set of
packed data from a corresponding one of a plurality of elements of a second packed data
of the first set of packed data to produce a first result having a plurality of difference
elements and a plurality of sign indicators.

20.   (Previously Presented)   The processor of Claim 19, wherein the first
format identifies the first set of packed data as packed bytes.

21.   (Previously Presented)   The processor of Claim 16, wherein performing
the first operation causes the execution unit to:

produce a first plurality of partial products in a multiplier having a plurality of
partial product selectors;

insert an element of a first plurality of elements of a first packed data into and
substituting for bit positions of one or more of the first plurality of partial products by
using partial product selectors corresponding to the bit positions; and

add the first plurality of elements together to produce a first result including a
field comprising a sum of the first plurality of elements, said field having a least
significant bit.

Application No.: 10/005,728   3   Docket No.: 42390P5943C

22.   (Previously Presented)   The processor of Claim 21, wherein performing
the first operation further causes the execution unit to:

       shift the first result to produce a second result having a least significant bit
position and to align the least significant bit of the field with the least significant bit
position of the second result.

23.   (Previously Presented)   The processor of Claim 21, wherein performing
the second operation causes the execution unit to:

       produce a second plurality of partial products in the multiplier having the
plurality of partial product selectors, the second plurality of partial products comprising
four distinct sets of partial products including a first set of partial products
corresponding to a first product for elements of the second set of packed data, a second
set of partial products corresponding to a second product for elements of the second set
of packed data, a third set of partial products corresponding to a third product for
elements of the second set of packed data, and a fourth set of partial products
corresponding to a fourth product for elements of the second set of packed data; and

       add the first set of partial products together with the second set of partial
products to produce a first distinct element of a packed result and add the third set of
partial products together with the fourth set of partial products to produce a second
distinct element of the packed result.

24.   (Previously Presented)   The processor of Claim 23, wherein the second
format identifies the second set of packed data as packed words.

Application No.: 10/005,728   4   Docket No.: 42390P5943C

25.   (Previously Presented)   The processor of Claim 16, wherein performing

the first operation causes the execution unit to:

  receive a plurality of difference elements and a plurality of sign indicators;

  produce a result data having a plurality of absolute value elements, each absolute

value element produced by

  (a) subtracting one of the plurality of difference elements from a corresponding

constant value if the sign indicator corresponding to that element is in a first state, or

  (b) adding one of the plurality of difference elements to a corresponding constant

value if the sign indicator corresponding to that element is in a second state.

26.   (Previously Presented)   A processor to execute instructions of the

PENTIUM microprocessor instruction set, the processor comprising:

  decode logic to decode a packed sum of absolute differences (PSAD) instruction

having a first format to identify a first set of packed data, said decode logic to initiate a

first set of operations on the first set of packed data responsive to decoding the PSAD

instruction;

  execution logic to perform a first operation of the first set of operations initiated

by the decode logic; and

  a bus to provide the first set of packed data to the execution logic for performing

of the first operation.

27.   (Previously Presented)   The processor of Claim 26, wherein the decode

logic comprises a look-up table.

Application No.: 10/005,728   5   Docket No.: 42390P5943C

28.   (Previously Presented)   The processor of Claim 26, wherein the decode

logic comprises integrated circuitry.

29.   (Previously Presented)   The processor of Claim 28, wherein the decode

logic further comprises executable operations.

30.   (Previously Presented)   The processor of Claim 29, wherein the decode

logic comprises:

        a packed subtract and write carry (PSBWC) operation;

        a packed absolute value and read carry (PABSRC) operation; and

        a packed add horizontal (PADDH) operation.

31.   (Previously Presented)   The processor of Claim 26, wherein the first

format identifies the first set of packed data as packed bytes.

32.   (Previously Presented)   The processor of Claim 31, wherein performing

the first operation causes the execution logic to:

        subtract one of a plurality of elements of a first packed data of the first set of

packed data from a corresponding one of a plurality of elements of a second packed data

of the first set of packed data to produce a first result having a plurality of difference

elements and a plurality of sign indicators; and

        store the plurality of difference elements and the plurality of sign indicators.

Application No.: 10/005,728   6   Docket No.: 42390P5943C

33.   (Previously Presented)   The processor of Claim 26, wherein performing the first operation causes the execution logic to:

produce a first plurality of partial products in a multiplier having a plurality of partial product selectors;

insert an element of a first plurality of elements of a first packed data into and substituting for bit positions of one or more of the first plurality of partial products by using partial product selectors corresponding to the bit positions; and

add the first plurality of elements together to produce a first result including a field comprising a sum of the first plurality of elements, said field having a least significant bit.

34.   (Previously Presented)   The processor of Claim 33, wherein performing the first operation further causes the execution logic to:

shift the first result to produce a second result having a least significant bit position and to align the least significant bit of the field with the least significant bit position of the second result.

35.   (Previously Presented)   The processor of Claim 26, the decode unit to decode a packed multiply-add (PMAD) instruction having a second format to identify a second set of packed data, said decode unit to initiate a second set of operations on the second set of packed data responsive to decoding the PMAD instruction.

36.   (Previously Presented)   The processor of Claim 35, execution unit to perform a second operation of the second set of operations initiated by the decode unit.

Application No.: 10/005,728   7   Docket No.: 42390P5943C

37.   (Previously Presented)   The processor of Claim 35, wherein the second

format identifies the second set of packed data as packed words.

38.   (Previously Presented)   The processor of Claim 26, wherein performing

the first operation causes the execution logic to:

    receive a plurality of difference elements and a plurality of sign indicators;

    produce a result data having a plurality of absolute value elements, each absolute

value element produced by

    (a) subtracting one of the plurality of difference elements from a corresponding

constant value if the sign indicator corresponding to that element is in a first state, or

    (b) adding one of the plurality of difference elements to a corresponding constant

value if the sign indicator corresponding to that element is in a second state.

39.   (Previously Presented)   A processor comprising:

    decode logic to decode a packed sum of absolute differences (PSAD) instruction

having a first format to identify a first set of packed data, said decode logic to initiate a

first set of operations on the first set of packed data responsive to decoding the PSAD

instruction, the first set of operations comprising:

        a packed subtract and write carry (PSUBWC) operation;

        a packed absolute value and read carry (PABSRC) operation; and

        a packed add horizontal (PADDH) operation.; and

    execution logic to perform the first set of operations initiated by the decode

logic.

Application No.: 10/005,728   8   Docket No.: 42390P5943C

40.   (Previously Presented)   The processor of Claim 39, wherein the first

format identifies the first set of packed data as packed bytes.

41.   (Previously Presented)   The processor of Claim 39, wherein performing

the PSUBWC operation causes the execution logic to:

    subtract one of a plurality of elements of a first packed data of the first set of

packed data from a corresponding one of a plurality of elements of a second packed data

of the first set of packed data to produce a first result having a plurality of difference

elements and a plurality of sign indicators; and

    store the plurality of difference elements and the plurality of sign indicators.

42.   (Previously Presented)   The processor of Claim 39, wherein performing

the PABSRC operation causes the execution logic to:

    receive a plurality of difference elements and a plurality of sign indicators;

    produce a result data having a plurality of absolute value elements, each absolute

value element produced by

    (a) subtracting one of the plurality of difference elements from a corresponding

constant value if the sign indicator corresponding to that element is in a first state, or

    (b) adding one of the plurality of difference elements to a corresponding constant

value if the sign indicator corresponding to that element is in a second state.

43.   (Previously Presented)   The processor of Claim 39, wherein performing

the PADDH operation causes the execution logic to:

    produce a first plurality of partial products in a multiplier having a plurality of

Application No.: 10/005,728   9   Docket No.: 42390P5943C

partial product selectors;

insert an element of a first plurality of elements of a first packed data into and substituting for bit positions of one or more of the first plurality of partial products by using partial product selectors corresponding to the bit positions; and

add the first plurality of elements together to produce a first result including a field comprising a sum of the first plurality of elements, said field having a least significant bit.

44.   (Previously Presented)   The processor of Claim 43, wherein performing the PADDH operation further causes the execution logic to:

shift the first result to produce a second result having a least significant bit position and to align the least significant bit of the field with the least significant bit position of the second result.

Application No.: 10/005,728   10   Docket No.: 42390P5943C